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THE JOURNAL OF PHILOSOPHY

VOL. XXIV. NO. 24: NOVEMBER 24, 1927

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PUBLISHED FORTNIGHTLY
BY THE
JOURNAL OF PHILOSOPHY, INC.

THE JOURNAL OF PHILOSOPHY

All communications to the Editors should be addressed to Professor FREDERICK J. E. WOODBRIDGE, or Professor WENDELL T. BUSH, or Professor HERBERT W. SCHNEIDER, Columbia University, New York.

Subscriptions and advertisements should be sent to THE JOURNAL OF PHILOSOPHY, 515 West 116th Street, New York. The annual subscription price (twenty-six numbers) is $4.00 and the charge for single numbers is 20 cents. Advertising rates will be forwarded on application.

THE JOURNAL OF PHILOSOPHY is owned by The Journal of Philosophy, Inc., 515 West 116th Street, New York, and published at Lancaster, Pa.: President, Wendell T. Bush; Vice-President, Herbert W. Schneider; Treasurer, Frederick J. E. Woodbridge; Secretary, Iris W. Wilder.

Entered as second class matter, March 18, 1921, at the Post Office at Lancaster, Pa., under Act of Congress of March 3, 1879.

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VOL. XXIV, No. 24. NOVEMBER 24, 1927

THE JOURNAL OF PHILOSOPHY

PERSONAL AGENCY AND THE HUMIAN ANALYSIS

THE recent revival and spirited defense of the doctrine of interaction in many able quarters have focussed attention once more upon what is the real kernel of the problem. Few now in this surprising age will venture to say that the interaction of mind and body is inconceivable. The old demur on the score of the Law of the Conservation of Energy has lost much of its force, partly because of its dubious assumptions and partly because of various promising loopholes of escape. The superfluity of consciousness in bodily control, once thought to be confirmed by the seeming facts of "unconscious cerebration" and the wonders of the reflex, is still as far as ever from being proved. These issues are by no means dead, but they seem to us now, as we look back, somewhat casuistical. We are at the real heart of the matter, however, when we revive the question: What is meant by mind acting on body (or *vice versa*)? And what positive grounds have we for affirming a real causal relation between these terms? Interactionists, of course, have constantly referred us to the crucial cases of volition and sensory stimulation as *prima-facie* evidence of psychophysical causation. But they have seldom had the courage of their convictions in proclaiming this to be more than observed uniformity of succession. It is surprising to find, for example, one prominent interactionist appealing to Hume as having once for all blasted the notion of "power" or "necessary connection" and yet championing interaction as a distinctive doctrine that implies, in opposition to parallelism, some real power of mind over body. For, once we accept Hume's criticism as valid and resign ourselves to "customary conjunction" or "uniformity of succession," what ground have we for objecting to parallelism as a less plausible interpretation of the facts? If that is all we know and all we need to know of causation, then it seems idle as to whether we read the psychophysical sequences down the series with the parallelist or across the series with the interactionist.

It was with a keen sense of strategy that Hume saw the crucial importance of voluntary action and launched the full force of his attack upon what he conceived to be the false implications of this universal experience. For the common-sense philosopher has always taken his stand upon the invincible testimony of consciousness that

here in the command of our will over our bodily movements we have the sign and seal or prototype of all true causation. Who shall say how much of the traditional cosmological argument has not rested, implicitly if not explicitly, upon this intuitive basis? Nor can we scorn this as mere naïve anthropomorphism when we recall how many modern philosophers of foremost rank from Descartes to Bergson have been in substantial sympathy with this position. Since Hume, however, it has hung its head and only now and then have serious suspicions arisen that Hume's classical argument might go the way of Berkeley's. The latter seems to be the candid opinion of so acute a thinker as Dr. C. D. Broad, who finds the great skeptic's case against interaction to be partly "silly" and partly "irrelevant."[1] On the other hand, Hume finds a spirited defender in Professor Hoernlé, who feels that Hume's analysis, while not fatal to a modest, empirical theory of interaction, is still in the main relevant and conclusive.[2] The purpose of this paper is not to enter into this controversy, but rather to inquire what answer we are able to make to-day to the very grave difficulties which Hume raised.

At the outset Hume admits, as do we all, the plain, everyday fact of voluntary control—the fact, namely, that "the motion of our body follows the command of our will" and that "of this we are at every moment conscious."[3] But of the real power or creative energy which accomplishes this, we, alas, know nothing. How familiar those soft, deadly cadences of the Humian logic! At the risk of abstraction, let us confine ourselves mainly to the argument concerning mind and body.

1. First, there is the unsurpassed mysteriousness of the union of soul with body. This does not intrigue us today in the same way; for we incline towards a more empirical approach. We do not start in Cartesian fashion with two alien substances, spiritual and material, which once having been logically put asunder can not be joined together. We take our stand rather upon the immediately experienced unity of mind and body and search in vain for the line of separation. What nature hath joined together, let not philosophers artificially put asunder. When I will to gesticulate and my arm executes the motion, is there any frontier or point of transition between the mental image and the bodily movement? If so, introspection can not discover it. The mystery, then, is not to find some interspanning connection between a separate cause and a separate effect, but to ascertain whether the evident continuity of mind and

[1] *The Mind and its Place in Nature*, pp. 101–103.

[2] "Broad and Hume on Causation and Volition," this JOURNAL, Vol. XXIV (1927), pp. 29–36.

[3] *Enquiry concerning Human Understanding*, Open Court Ed., p. 66.

body is a mere determinate flow or whether it deepens somehow into causal necessity. Between passive flux and active effort there is, for common sense at least, a whole universe of difference. The opposition between pleasantness and unpleasantness, or between black and white, does not seem so great or so profound as the felt antithesis of *active* and *passive*. Shall we not, as James suggested, take this experience at its metaphysical face value?

If the traditional two-substance theory were all that Hume was attacking at this point, why did he press home a sheerly empirical difficulty? His repugnance to thinking that "the most refined thought is able to actuate the grossest matter" betrays a psychological rather than a logical prejudice. It is more akin to that Victorian shrug of incredulity: "How shall the idea of a beefsteak bind two molecules together?" In this day of radio and other once-incredible marvels of science, we hesitate to dictate to nature in so arrogant a fashion. There is also a fallacy of observation in the objection. Except in the secondary automatism of habit, some dynamic content such as the intention or feeling of endeavor is invariably present. Pure thought seems never to actuate the musculature except through the psycho-physical medium of effort; and effort, it is significant to note, is by introspective testimony a common factor in both mental and bodily activity.

Another of Hume's challenges in this argument seems high-handed and unreasonable. If we are to know this power of the will, why must we first know "the secret union of soul and body and the nature of both these substances?" If power lies in the mysterious limbo of the unconscious or amid psycho-cerebral machinery under the threshold, then surely we know it not. But what if it should lie on the surface in open awareness as it so strongly seems to do? There is a curious all-or-none principle that lurks behind the whole of Hume's critique and betrays a certain intolerance. He seems to say: either we know the whole story of the mind-body relation or we know nothing of it. Such a position were truly suicidal. If in such despair at the outset, we need argue no further. But does knowledge not rather start from small beginnings and grow from more to more? If we had first to know everything of a given matter, how could we ever know anything?

2. Next, there is the argument against "power" and "necessary connection" on the ground of the severe limitations of the will's authority. "Why has the will an influence over tongue and fingers and not over the heart and liver?" Were we "fully acquainted with the power or force by which it operates, we should also know why its influence reaches precisely to such boundaries and no fur-

ther."[4] Who should possess such remarkable knowledge? The ordinary run of mankind or only the psychologist? The psychologist, of course, now confidently tells us that the economy of the organism demands such a hierarchy of function. Just as the general who should attempt to carry in his head all the detailed duties of his army of privates would suffer a brainstorm, so conscious control would be utterly swamped by the terrific burden of regulating all the thousands of vital and reflex functions. As a matter of fact, in both cases the lower level details are entrusted to a descending scale of subordinates. Moreover, the autonomic nervous system which regulates the heart and the liver is insulated from cortical control by high synaptic resistances and only in emotional crisis or under hypnosis is conscious control extended beyond its normal limits. In the case of the man "suddenly struck with palsy," we have simply a pathological restriction of voluntary control such as is caused by lesions in the motor areas of the cortex. Why, then, the illusion of power when there is none? Surely because there is kinesthesis in the adjacent, unparalyzed muscles, supplemented by revived memory images of the lost motor movements. As a matter of fact, the paralytic still exercises a measure of control: (*a*) over his intention and (*b*) over adjacent, unparalyzed muscles. Consciousness deceives in a measure as usual, but its deceptiveness can be explained and allowed for, as in the case of any other illusion.

But perhaps Hume would welcome such an explanation as clinching his main point, namely, that experience alone teaches us the what and how of the will's power. If we really knew this alleged power of the mind over the body, we should know *a priori* and *without* the psychologist, what act of will would move what muscle and which one would not. But is not this, after all, a rather extraordinary assumption? Do we find any capacity of mind or body, whether cognitive, affective, or motor, to be perfected at the outset? Or unlimited in scope? Conviction is growing that truth, like other values, can not be judged by the crude and experimental beginnings of its discovery, but rather by its ripened, full-formed fruitage. Knowledge of the power of volition, like the power to perceive external objects, because constantly developing and undergoing refinement, need not be either unlimited or infallible to be actual and veridical within its limits. Hume says to us in effect: either we are conscious of the power of mind over body prior to and independent of experience or else it is only an artifact, an artificial construction from repeated experience. This dilemma is unconvincing; for there is at least a third possibility, namely, that we perceive this power or necessity, not *before* or *after* experience, but as all volun-

[4] Hume, *loc. cit.*, p. 67.

tarists have believed, *within* the living heart of experience. Against Hume's *ipse dixit* that "experience only teaches us how one event constantly follows another," we have the equally solemn affirmation of his opponents that they discover more than this, namely, a necessitation or real causing of the bodily act by the will. Is this an illusion? Whose introspective testimony shall we accept: that of sceptical sophistication or the fresh, realistic simplicity of common sense?

3. Hume's third objection is more serious for the advocate of causal interaction. "The immediate object of power in voluntary motion is not the member itself which is moved, but certain muscles, and nerves, and animal spirits . . . through which the motion is successfully propagated, ere it reach the member itself whose motion is the immediate object of volition."[5] Ardent parallelists like Professor Strong have been wont to consider this argument unanswerable, since it impales the interactionist on the horns of a dilemma.[6] Does the volition act upon the brain or directly upon the bodily member whose action is called forth? If the interactionist says the former, then the causal relation which he claims to perceive is an indirect and hence only an apparent one. If he says the latter, then what is the use of the brain with its motor areas and the descending motor tracts? The interactionist has never, I think, sufficiently exercised himself to meet this dilemma. For the most part, he has simply reiterated the universally attested uniformities of voluntary action. Now Pillsbury and other cautious scientists have assured us, after reviewing the experimental evidence, that the connection between the volition and the corresponding motor-act conforms to all the logical canons of causation.[7] But time and time again in the history of science, apparent uniformities have been displaced by deeper-lying uniformities. Consequently, the interactionist's claim to have established a true case of causation between mind and body remains precarious as long as the causal sequence in question is suspected of being an indirect one.

It is by no means clear that Hume spoke the last word on this matter. We certainly do not learn from anatomy, or from psychology either, that the volition, if it acts at all, acts on the member in question only through a chain of intermediate causes, namely, the cerebro-motor series. This is no finding of empirical science,

[5] Hume, *loc. cit.*, p. 68.

[6] C. A. Strong, *Why the Mind Has a Body.*

[7] *Titchener Commemorative Volume, Studies in Psychology,* 1917, pp. 21–22. *Cf.* also, H. S. Jennings, "Mechanism and Vitalism," *Philosophical Review,* Vol. XXVII, pp. 577ff; and C. J. Herrick, this JOURNAL, Vol. XII (1915), pp. 547–549.

but a Cartesian interpretation of anatomy. The testimony of immediate experience is that the mental process known as the intention flows directly and uninterruptedly into the arm movement. In fact, the two events are so intimately interfused that they seem but two phases of one continuous process; and it is only when the volition is frustrated or inhibited that we can isolate the one from the other. The interactionist, therefore, may boldly ask: "How do we know that there are any *intermediate* events between volition and motor response?" There are none, he may go on to affirm. The evidence is, at best, indirect and far from crucial. Sever the motor nerve between the cortex and the muscle and the volition fails to take effect. What does this prove? Simply that uninterrupted connection between brain and muscle is a necessary condition of effective volition; *not* that a series of neural events must *intervene*. What, then, is the function of the neuro-muscular mechanism on the efferent side? The interactionist may reply, developing his hypothesis, that it is to execute the movement in detail. The function of the conscious process, on the other hand, is not to act as a *deus ex machina* or omniscient wire-puller, but to initiate and in a broad way to orient the energy-flow. According to this view, the conscious self is no mystic telegraph operator at the brain terminals, darkly fraternizing with the myriad synapses of that super-switchboard. It rather pervades the organism with its own telic energy in much the same way as a magnetic field of force is thought to permeate the armature of an electric motor, but perhaps in an even more intimate manner.[8] There is no good reason, in fact, why the doctrine of interaction should be fatally tied up with an artificial dualism of external relations or with the Cartesian myth of a de-materialized ghost lodged in a soulless automaton. Such an entangling alliance has too long held it in disrepute. If this more monistic view of interaction should be found tenable, in contradistinction to identity theories at the other extreme, it would go far to meet the causal difficulty. For it construes the volition as related to the bodily act, not in a mysteriously external, "transeunt" relation, but exactly as introspection reveals, namely, as successive phases of a continuous sequence of "immanent" causation. Causality, as Mr. Alexander suggests, is at bottom continuity.[9] But, in its psychogenic aspect at least, it is more. For it is no mere passing flux or flight of evanescent instants, but a continuity deepened into the quality of propulsion.

Let us suppose, on the other hand, that our friend, the interac-

[8] The extrovasory effects in hypnosis (*e.g.*, blister formation) are strikingly suggestive here.

[9] S. Alexander, *Space, Time and Deity*, Vol. I, p. 281.

tionist, adopts the view that the self or volition acts causally upon the brain. Is he not then forced to confess that the causal relation is not immediately perceived, but is partly shrouded in mystery and hence a hazardous inference at best? This being the case, how can he be sure that the parallelist's version is not the truer one? To be sure, the interactionist can challenge the parallelist to justify his *denial* of psychophysical causality, while yet *affirming* the reality of interphysical or inter-mental causality—a challenge which, I feel sure, the parallelist has never met. Indeed, to suppose that, in the case of the conscious organism, nature's chains of causation become so exclusive as to move only on parallel tracks like railway trains abreast, is to suppose so glaring an anomaly in the whole realm of natural causes as to be incredible. Do we not find everywhere else a glorious democracy of intercausation? But this long obvious weakness of parallelism does not really advance the cause of interaction. It is such a seeming *impasse* that has led many philosophers to declare that the issue between these two historic theories is either insoluble or irrelevant.[10]

The interactionist, however, has one interesting resource left. He may take his stand upon the significant analogy between causal realism and perceptual realism. If physiological *intervention* is fatal in the one case, is it not so in the other? Or if it does not destroy certainty in the second case, why should it in the first? The thorough-going realist is so sure of the real presence of the perceptual object before him that he is ready either to deny that the sensori-cerebral mechanism of perception intervenes between the knower and the object or to affirm boldly that such intervention is no obstacle to veridical knowledge. One may classify realists, in fact, into two groups, according as they proceed logically and dialectically from the immediate presence of the object in perception or proceed psychophysically from the objectified "vision" conditioned by the brain. It has been the seven days' wonder of philosophy as to when and where these two ends of the tunnel are to meet. Some believe that they have now met. All parties agree, however, that the instrumentality of sensory stimulation (e.g., from eye to brain) is no ground for denying the reality of perception, but simply a condition of its detailed effectiveness. Why, then, should that of cerebro-motor innervation not bear the same relation to the causal unity of mind and body in volition? The analogy receives added strength when we recall: (1) that the "instinctive" belief in the objective reality of things about us is derived, not from the vividness of sensation, but from our voluntary effort against the resistance

[10] *Cf.* B. Russell, *Mysticism and Logic*, "The Notion of Cause."

of these same objects;[11] and (2) that our belief in the power of our minds over our bodies develops in early experience *pari passu* with our conviction of the external reality of physical things. Conversely, when the mind loses its sense of power, as in certain pathological states, the outer world becomes shadowy and unreal, even though sensory acuity is unimpaired.[12] It is, therefore, difficult to escape the conviction that the perception of force, power, or energy —which is always an experience of volition in some measure—can not be separated from the perception of size, shape, and the other primary characters of external reality; that its veridity stands or falls with that of the latter; and that in the active-passive reciprocity of normal effective volition through our bodies force meets force as really and as truly as mind envisages nature in perception.

4. Another classical objection is one which Hume raised in one of his fertile footnotes, namely, that "we attribute power to a vast number of objects, where we never can suppose this resistance or exertion of force to take place.[13] Notable cases are the Supreme Being, "the mind in its command over its ideas and limbs" and inanimate matter. But (1) why should we suppose that the Supreme Being never meets with any resistance? To the modern mind this is a very dubious inference from the postulate of omnipotence. (2) It is simply not true that in the second case "the effect follows immediately upon the will without any exertion or summoning up of force." Such is the case only in habitual action and in certain automatisms; normal volition is attended by the sense of effort in however varying a degree. (3) Finally—and this is the most serious difficulty—how can we suppose inanimate matter to be capable of a sentiment of endeavor? Thus, if I am pushing at a boulder and conscious of my own power against its resistance, I can not suppose the stone or its component atoms to experience a similar and opposing feeling of effort.

To the panpsychist, this challenge is welcome, for he boldly draws the very conclusion which Hume shuns, to wit, that physical nature is not dead and inert, but living, active, striving. Following Leibniz, he even appeals to our experience of force as one of our chief bases for this view of nature. It is not, of course, the physical object as a whole that feels and strives, but rather the psychic atoms or monads of which it is composed. This dramatic theory of reality has had a strange fascination for many able minds; and who, after all, can deny that it may be true? It remains an interesting but, as yet, unverifiable speculation founded upon an imperfect analogy.

[11] W. McDougall, *Outline of Psychology*, p. 372.

[12] *Ibid.*, p. 372.

[13] *Op. cit.*, p. 69.

Just here, however, is raised the crucial question as to how much objectivity we can ascribe to our experience of force. When I perceive this fountain-pen, for example, the size, shape, and even the color seem to be there in the pen and not in my mind, but my conscious act of perceiving, which I can introspectively distinguish—*that* is not in the pen. Why, then, should the boulder which opposes my effort possess, not only the quality of force, but something similar to my consciousness of endeavor as well? The opposite view, namely, that our kinesthetic sensations have no objective validity while our visual sensations have, is, as Professor Montague has pointed out, quite indefensible.[14] There remains a middle ground. Force may be something objectively given in perception, but distinguishable from our subjective sense of effort or striving.

What is this something? Is it merely a decorative quality which inheres in physical objects like color, perhaps? Or is it a peculiar relationship characterized by something like necessity? Both these views have been held, but, taken separately, they miss out a vital and essential aspect. If force is simply a quality inherent in the object, then its connection with its effect is purely external and arbitrary. On the other hand, if it is a pure relationship, a mere bond of connection between qualities or events, then, as Hume pointed out, we seek it in vain through the whole realm of nature. The most promising alternative seems to be to regard it as a relational quality or qualitative relation. It certainly possesses quality or our kinesthetic experience is sheer illusion. But it is also perceived as something which binds the parts of our experience together, which *makes* one event follow another or the same event continue. Now this qualitative relation is primarily given in our experience of voluntary effort. Is force, then, to be identified with real causality and, in especial, with the power of the mind over the body? This is the voluntaristic hypothesis, and the strongest ground for it is that the body is our intermediary in the experience of reciprocal effort and resistance and that in kinesthesis mind and body interfuse—a unity which is not incompatible with a remaining duality of content and function.

At this point, however, Hume shoots his favorite arrow. "This sentiment of an endeavor to overcome resistance has no known connection with any event: What follows it we know by experience; but could not know it *a priori.*"[15] If by causality we can only mean a deductive principle by which the details of experience can be magically deduced *a priori*, then, indeed, Hume is unanswerable

[14] Consciousness a Form of Energy," *Essays in Honor of William James.* Also, "Variation, Heredity and Consciousness," *Proc. Arist. Soc.*, 1920–21.

[15] *Op. cit.*, p. 69, footnote.

and, we may add, scientific investigation superfluous. But if causality be a principle of internal connection, empirically discovered in the dynamic flux of immediate experience and then inferable beyond the personal flux with the same degree of certainty as other empirical characters, then the difficulty is robbed of much of its force. The truly radical empiricist can say: here, at least, when I will, is real causality at work; and wherever experimental analysis exhibits true causal sequence, I may reasonably infer this pervading "necessity" to be present also. May it not be that Hume, in demolishing the fearful bogey of an overarching rationalistic necessity, overlooked this modest, empirical necessity and so fell back on the unsatisfying phantom of customary conjunction?

5. Hume's final thunderbolt is hurled against the alleged power of the mind over itself. Here it is no longer a question of interaction, but one main point deserves notice: Hume shifts his ground and concentrates his murderous fire upon the notion of "creation out of nothing" as the supposed essence of power. Such "creative power" by which the mind "raises from nothing a new idea" is "not felt, nor known, nor even conceivable by the mind."[16] Hume seems to present us with a dilemma, one of whose horns is a self-contradictory proposition. Either we are conscious of the power of our minds to produce ideas out of nothing; or else volition and idea are inscrutably conjoined with no intelligible bond of connection. In the first case, we are asked to explain the *ex hypothesi* inexplicable—not how the mind produces an idea (something similar to itself) out of itself, but how it produces an idea, an alien something, out of nothing! We are challenged to conceive of a triadic causal relation between three terms, one of which is non-existent. One is reminded of the old conundrum about the irresistible force meeting the immovable obstacle. But suppose we admit the inconceivability (to us) of this kind of causation and drop out the non-existent term, "nothing," are we driven back to the other horn of the dilemma? Is the relationship between volition and idea utterly incomprehensible? Surely not. As in the case of bodily control, the two are not discrete events externally related, but successive phases of one continuous and unitary process. Here again, in the ever fleeting duration of the "specious present," we live through the dynamic connection of will and idea and feel as irresistibly that we are controlling in a measure the course and sequence of our thinking. But, it may be rejoined, do not our ideas *come* to us, leap forth out of the void as it were? Yes, but such receptivity is usually the fruition of previous effortful thinking. So far as thought is purely creative and absolute novelties emerge, we may

[16] *Op. cit.*, pp. 70, 71.

well share Hume's humility. At such moments, the mind is simply passive, not active. Even to genius nature seems to say: Be humbly creative (by persistent effort) and I will make you greatly creative (by inspiration).

To affirm that the will may be causally active in generating thought is not to deny that the mind's control over itself is strictly limited, extremely variable, and profoundly dependent upon experience. Begotten of desire, cradled in association, nurtured by incessant stimuli, may it not nevertheless emerge into true autonomy? At least, we should not be stampeded into scepticism by an arbitrary, hard-and-fast logic with all-or-none categories or by outworn phobias for *a priori* magic. If, moreover, we replace a structuralistic-atomistic, by a functionalistic-organic, theory of causation and creativity, we shall remove, perhaps, the greatest stumbling-block to the restoration of this dethroned category.

To sum up—Hume's formidable critique of the volitional theory of causation may be written down unproved until the following basic assumptions and questionable principles receive better support: (1) That causes and effects are disjoined, being separate and distinct elements of experience. (2) That in the case of mind and body, we must either know the complete nature of the cause and effect and of their connection or we can not know it at all. (3) That this connection must either be intelligible to us before the first experience of the effect or not at all; for the pseudo-intelligibility that comes from repeated experience is an opaque and artificial association of otherwise unrelated data. (4) That necessary connection must be an external relation joining, but separate from, the terms connected. (5) That power (of the mind over its ideas) means creation out of nothing; or else it is a mere subjective and illusory confidence based upon repeated experience. I am unable to find any real ground for assenting to these propositions. We have, then, it seems to me, only Hume's affidavit as to his personal introspections in the matter.

As against this, dynamism or causal voluntarism is the view that in volition we achieve our truest and most fundamental knowledge of causation. This commonly discredited view becomes greatly strengthened if we can show: (1) That in volition cause and effect are not distinct elements, but distinguishable phases of one continuous process. (2) That the brain and its issuant motor excitations probably do not intervene between the volition and bodily act, but rather underly and effectuate the detailed execution of the act. (3) That the relation of volition and bodily movement, as subject to psychological investigation, satisfies all the logical criteria such as agreement, difference and concomitant variations. (4) That kines-

thesis and visual perception are so intimately related and their abstraction so indefensible that we can not be visual realists without affirming also the objective reality of force. (5) That force, since invariably perceived as related to our voluntary effort, is best regarded as a qualitative relation, rather than as a simple quality or pure relation. (6) That the antithesis between activity and passivity (resistance) is one of the most vivid and meaningful in our whole experience and there is no good reason for denying its implicit truth-claim. (7) That external resistance is perceived as opposing force, but not necessarily personified. As in perception, the purely subjective factors can be eliminated or shown to be irrelevant, leaving this essential core of objective force or causality. The panpsychic conclusion thus need not be drawn; or, if drawn, requires some better ground of inference. (8) Since the human body is the medium of interaction between the mind and the outer world, being a common term in a triadic relation, we may regard the perceived power of mind over body as a primary causal relation of the same order as external causality under the aspect of force. Conjointly, kinesthesis may well be that which mind and body have in common, the locus, so to speak, of their union. (9) This causal relation is no *a priori* principle of overarching necessity, but an empirical, conditional necessity. When we will and execute a movement, we judge as irresistibly as in drawing a logical conclusion that the effect is no mere happening, but, here at least, *must* occur. Can we, then, postulate universal causation? Perhaps the best thing we can say is that, when allowance is made for illusions and counter-causes, causal realism, like perceptual realism, is an internally and externally consistent, fruitful, and on the whole extremely good, hypothesis. In his less fanatical and more confident moods, Hume seems, in fact, to have agreed.

In conclusion, to say that mental events like volitions are the causes of bodily movements is to assert: (1) scientifically, that the first are experimental determiners of the second in such a way as to satisfy all the causal criteria: and (2) metaphysically, that uniformity of sequence is the sign of something deeper or more fundamental, namely, an internal, qualitative relation which is perceived to pervade the indivisible continuity of mind-body in volition and which is characterized by a certain necessity of the *this-must*, rather than of the *all-must* type. Such necessity, however, far from being "merely subjective," is as truly objective as a valid inference or a true perception. If this view be rational and in accord with the facts, then those philosophers are right who say that in willing our bodies to move we know in very truth that which *makes* things happen.

DENISON MAURICE ALLAN.

HAMPDEN-SIDNEY COLLEGE.

MR. DRAKE ON ESSENCES AND DATA

IN discussing the epistemology of Messrs. Strong and Drake recently in this JOURNAL,[1] I made the assertion that their theory was based upon the postulate of an essential identity between the data of perception and those of thought. I noted the fact that in accepting this identity for purposes of discussion, I did not mean to suggest that it was my own point of view; I was simply not interested in examining it at the time.

Mr. Drake, however, in his reply,[2] attempts to justify this fundamental postulate and since what he says suggests some difficulties which I did not emphasize sufficiently in my original article, I shall briefly present them here.

There is a possible difference between sensation and thought according to Mr. Drake (p. 571). For the essence in thought may be less vivid and less detailed than the essence in sensation. But this difference is unimportant, and "it is a fact . . . that what we think of *may* be identical with what we perceive . . . else we could never think or talk about what we see or hear."

I suspect—though Mr. Drake is a greater authority in this matter than I—that one of the motives for assuming essences is to explain how we think about what we sense. If the essence of a given subject-matter must be identical in thought and sensation in order for us to think about what we sense, then we ought to have some difficulty in thinking about things the essences of which are different in thought and sensation. Moreover, if the essences of what we sense and what we think of can be different, then there is as great a gulf between sensation and thought as the traditional gulf between mind and matter. Sensation *prima facie* seems to be a link between our "minds" and the "external world." It seems to refer to an object which is not "directly given"—the scientific object perhaps —and at the same time, as a perceptual datum, to be more personal, less stable than a physical object. If now it could appear without the intervention of an external world, we could call it a "thought," and the objective item in thought and sensation would be the same and the gulf would be bridged.

But if one could show that there are entities which we perceive and then think about which appear differently (however slightly) in perception and in thought, we have proved that it is possible to think about objects which are present to the mind as data which differ from the data in or through which they were present to per-

[1] Vol. XXIV (1927), pp. 487–498.

[2] "The Data of Consciousness as Essences," this JOURNAL, Vol. XXIV (1927), pp. 569–577.

ception or with which they might have been supposed to be identical in perception. And that Mr. Drake admits when he says that the essence in thought is usually less vivid and less detailed than the essence in sensation.

A more fundamental question now arises. What exactly are the essences? What does the term "essence" denote, not what does it connote? I had gathered from reading Messrs. Strong and Drake and Santayana that it denoted above all the sensory content of what Mr. Santayana calls "intuition," i.e., colors, sounds, pains, etc. If that be true, then a given perceptual datum, Essence I, could not be identical with a given conceptual datum, Essence II, if Essence II were no matter how slightly different. Is pink identical with red? Yet its only difference is one of intensity.

Though the word "essence" seems to denote data and nothing else, the use of the word is not clear-cut and straightforward. Reading the works of the authors I am discussing will reveal an ambiguity which is vital to the plausibility of the whole essence-theory. At times the essence is *of* things; it is what I spoke of in my original articles as "the Aristotelian essence." The Aristotelian essence was, of course, the most valuable thing anyone could ever know about an object and if it could be shown that the datum of intuition coincided with the Aristotelian essence, then no one would deny that intuition revealed truth of a very high order. In general, Aristotle believed that the essence is the object of thought, not of sensory intuition; in fact, only in the case of incomposites, if I am not mistaken, were the essence and the perceptual datum identical. And that was because it was the essence of incomposites to be perceptual data.

That ambiguity, I believe, is what causes Mr. Drake to say that, for instance, when one sees a red apple and when one thinks of one, the essence is the same. For how can the essence of red apples differ? So, I recall, another philosopher asked whether the essences of a real hundred dollars and of an imaginary hundred dollars were not the same. But this use of the word "essence" is Aristotelian and it is obvious that certain Aristotelian essences could never be intuited, e.g., the essences of electrons, of perfect circles, of $\sqrt{-1}$. And a little reflection will suggest a number of others. Nor would anyone deny that if there were such things as Aristotelian essences, they would be situated wherever their appropriate substances would be found, be it in sensation, conception, imagination, hallucination, or where you will.

But this is far from implying that the essence in the sense which has been popularized by Mr. Santayana and some of the critical realists, viz., as the datum of perception, is the same in both sensation

and thought. I take it that a synonym for "essence" in this case would be "perceptual content" or "imaginal content" or "sense-datum," to wit, whatever is before the mind as content regardless of "meaning" or of the half-conscious references which we habitually make when aware of almost anything that is not too startling, too novel, too intense, or otherwise too engrossing. It is obvious that the essence of my red apple in this case would be—speaking only of the visual apple—such and such a red shape. And it is equally obvious that when I think of a red apple, the essence—i.e., the imaginal content—may be merely the verbal "red apple" with but the most shapeless and faintest flash of red. Mr. Drake knows this too and honestly states it when he says that "what is 'given,' what is our datum, in conception, may then be only a part, or aspect, of the total essence, or complex of essences, given in perception" (p. 573). But one could not have part of an Aristotelian essence. What would the words mean, "a part of appleness"?

Now it is clear that if the two meanings of the word "essence" are kept apart, the occasional high degree of similarity between the Drakean essence in thought and perception is no guarantee of the identity of the Aristotelian essence in thought and in perception. Common experience shows us at least the following situations.

(1) Where perception conceals the Aristotelian essence. Example: the white swans of Mill, or any other case where we misjudge because of appearance.

(2) Where perception reveals the Aristotelian essence. Examples: the incomposites.

(3) Where our thoughts repeat the error of perception either because (*a*) we continue to "see" the swans that we think of as white, or (*b*) we are ignorant.

(4) Where our thoughts correct the error of perception either (*a*) in spite of the retention of a misleading imaginal content, or (*b*) because of a new imaginal content—we have seen black swans. Hence the theory that the datum of perception is an "essence" does not eliminate the duality of thought and perception. It is vain to say that it sometimes does, for if it does only sometimes, it must do so accidentally and not essentially.

There are one or two interesting consequences which I think would follow from Mr. Drake's theory, if he took it seriously. Were the datum of perception a Drakean essence, it is obvious that two or more people might "have" an identical datum as the object of their perceptions; there would be one relatum and two referentes in the perceptual relation. That, indeed, is one of the beauties of the theory, it gives perceivers common objects—not in the sense of common infra-perceptual or scientific objects, but of perceptual ob-

jects. What you and I see is numerically the same. If, now, this be true of thought, and according to Mr. Drake it "sometimes is," —the "sometimes" is what makes me suggest that he does not take his theory seriously—then two people's thoughts of the same thing would be the same thought. If the Kaiser and M. Poincaré, for instance, were both thinking of the War, they would have the same thought. Has Mr. Drake in the interests of teachers and students, of parents and children, and of fellow philosophers, no recipé for extending that "sometimes" to "always"? For, after all, what is the cause of most of our misunderstandings of other people, what is the basis of our need of language, but what Mr. Drake would no doubt call the illusion of a disparity of imaginal content in two people's thoughts of the same thing?

It is clear that the very phrase, "the thought of x," is ambiguous. What is the thought of an object? A thought about the object? Or an image of the object?

This brings us to another apparent ambiguity in Mr. Drake's theory. I refer to the concept of "datum." Mr. Loewenberg in his "Pre-analytical and Post-analytical Data"[3] has already distinguished two meanings of the term. Mr. Drake's reply suggests a third. At times he speaks of data as the actual content—or object-term—in awareness, at times as the subject-matter of judgment. His essence-theory seems to begin by being a theory of the nature of perceptual data. The question that seems to confront its author is, What are these colors, sounds, and so on, which we meet in perception? Are they the objects of naïve realism, Lockean ideas, "sensa," or something else? The answer is that they are essences. But by means of the assumption with a discussion of which this paper opens, he finds himself faced with the problem of thought. And soon "datum" takes on the second meaning, of the "reference" or subject-matter of thought. Thus he is able to say (p. 572), "Surely the 'transcendent reference' is an aspect of the very process of *thinking of* something; when we have thought of it we have already made the transcendent reference. Cognition gets all the way across in one jump, it does not create intermediate existents. It is the object at the further end that is the *datum*" (his italics). Sentences of this sort are very difficult to interpret. I quite agree that thinking is in part the process of making transcendent references; we make them, however, so badly that we require all the tools of logic, of the theory of probability, sometimes a bit of physics and psychology, to keep ourselves from acting like medicine men about them. "The object at the further end," then, can not be the datum in the literal meaning of the word; if it were, why "the

[3] This JOURNAL, Vol. XXIV (1927), pp. 5–14.

further end''? Why the transcendent reference? What would the reference transcend? One is all prepared, forgetting *Mind and its Place in Nature,* to believe that Mr. Drake is an epistemological monist. But immediately after this passage, in suggesting that I may be led astray by "the facts of error, dreaming, of imagination, etc.," he speaks of "the cases where our data are not independent existents." This seems to imply that at times they are independent existents and we naturally ask, "Independent of what?" Does he not mean of the datum in the first sense of the word, i.e., of the perceptual content?

The same ambiguity of meaning occurs in a later paragraph (p. 573). Mr. Drake is discussing the objection that if the word "essence" denotes "anything that can be mentioned," it is meaningless, by which I mean that it has no specific connotation. He indicates clearly that his theory is an attempted answer to the question, "Are the data of perception physical existents, or mental existents?" His theory is "They *may* be physical existents, or aspects of physical existents, or they may *not* be. In any case they are essences" (his italics). But if essences are anything that can be mentioned, what have we learned about the data of perception? Merely that they are anything that can be mentioned. When that occurred to me in reading *Mind and its Place in Nature,* I confess that it seemed so improbable that I interpreted it as an oversight on the part of Mr. Drake and I put it in a footnote where it might rest in relative obscurity and still satisfy a critic's pride in having overlooked nothing. Its author, however, now drags it into the light of day and I gather that he wishes it to stand. But it is fairly clear that the reason why he says it is because he has now slipped over to the second meaning of the term "datum," namely, "any possible subject of judgment." For he says, "Anything you can mention may be a datum of consciousness and indeed is a datum for you when you mention it" (p. 573). Can there be any doubt that the word "datum" means two different things here, or if it does not, that it means something different from what it meant when Mr. Drake was speaking of the data of perception? One can mention several things in the past, for instance, which could never be data for one as data of perception are data, unless all the data of consciousness are essences in what I first took to be the original connotation of the word, i.e., inexistent, timeless, floating qualities. But if that is true, then essences are not anything that can be mentioned, for existent, dated things can be mentioned. And if mentioning them skims them off the surface of existence and undates them, then there is duality—not sometimes, but always—between the data of

consciousness and that to which they transcendently refer, the "object at the further end."

"The relation between the status of existence and the status of being-an-essence is impossible to define, I fear, perhaps impossible to understand" (p. 573). Yet it must be defined, otherwise the whole value of the theory depreciates to zero. For the distinction between existence and being-an-essence is presumably the novelty which Mr. Drake is introducing into epistemology as an aid to explaining the nature of the data of consciousness. To be sure, if essences are everything that can be mentioned, they include existents and we are where we were before, to wit, without a theory. Mr. Drake, nevertheless, no sooner gives his critics the comfort of feeling that they are criticizing nothing, than he proceeds to point out that data are not everything that can be mentioned. They are now said to be that "which is 'before the mind,' which one 'sees,' or 'feels,' or what not," to wit, I suppose, the data of perception or the imaginal content of thought. They are said to be between "the object to be known" and "the mental state of the knower" (p. 575). This datum is what he has been especially calling the essence, but this practice has been, he believes, unfortunate. For essences are not "some new and queer sort of being to add to the confusion of existence" (p. 575). Still, they are timeless and spaceless. . . .

We may, I believe, conclude that Mr. Drake's belief is about as follows. There are three kinds of entities in our world, species of the genus "essence" (i.e., being). They are mental states, physical objects, and data of consciousness. At times we are directly aware of each of these species, at times we are aware of certain of their "aspects" or parts. In the former case, "perception is veridical and epistemological monism is a fact" (p. 576).

If this really is Mr. Drake's theory, our difficulties can be easily settled. Let him answer the following question, "When we are not directly aware of the physical object or mental state, what exactly are we aware of ?" The question is not answered by saying, "Of an essence," for anything by definition is an essence. We must be told the properties which differentiate that species of essence from the other two. He must then give us a way of distinguishing between such essences *when we are aware of them* and the other two types.

GEORGE BOAS.

THE JOHNS HOPKINS UNIVERSITY.

BOOK REVIEWS

The Logic of Modern Physics. P. W. BRIDGMAN. New York: The Macmillan Co. 1927. Pp. xiv + 220.

Writers in the philosophy of science may be divided into two groups: scientists who write bad philosophy, and philosophers who write bad science. Measured in terms of significant contributions to the subject, the former are slightly in the lead. The reasons for this are probably two in number. In the first place, bad philosophy (probably because there is so much of it) is much less obnoxious than bad science. In the second place, when the scientist is speaking one can be relatively sure that his science is good, but when the philosopher is speaking there is always the possibility that his philosophy will be bad, even though he is a *good* philosopher. It is unusually refreshing, therefore, to come upon a scientist who combines a thorough understanding of modern physical theories with a philosophy which is quite sound. Professor Bridgman's book is one of the most important additions to the philosophy of science which has appeared in recent years.

The author's thesis is essentially this: The rapid advance of knowledge in the sphere of theoretical physics, particularly in connection with the restricted theory of relativity and the quantum realm, has necessitated a reëxamination of the fundamental concepts of this science with a view to determining their adequacy in meeting the new experimental data. It is a commonplace, of course, that most of the physical concepts have proven incapable of accommodating themselves to these additional facts, and have been completely abandoned in favor of concepts with an entirely new content. This has been very upsetting to the complacency of physics. Professor Bridgman not only keenly appreciates this situation, but also clearly recognizes the possibility of many such disturbances occurring in the future. As long as physics continues to increase the range of its data, this revision of concepts must go on. He therefore asks a very pertinent question: Isn't it possible to define our fundamental concepts in such a way that the range or scope of each concept will be a part of its content? If this can be done, we can avoid the danger of applying the concept beyond the range of facts for which it is valid. For outside of its own sphere it will be *meaningless.*

Professor Bridgman then attempts to show what this new attitude toward concepts will be. Every concept must henceforth be defined *operationally,* i.e., we know what a concept means when we know what operations must be performed in order to produce an instance of that concept. The concept of length, for example, is "fixed when the operations by which length is measured are fixed;

that is, the concept of length involves as much as and nothing more than the set of operations by which length is determined . . . *the concept is synonymous with the corresponding set of operations*" (p. 5). From this point of view many of the traditional concepts become strictly meaningless. For example, when we come to measure "absolute time" we find that all of the processes involved are relative. Again, the concept of length as defined in ordinary experience becomes meaningless when applied to objects moving with a velocity approximating that of light; for the processes involved in the measurement of such lengths are not those employed in determining the size of a house or a lot. Einstein's " 'length' does not mean the same as our 'length' " (p. 12).

Mathematics must be applied, therefore, with some degree of caution in describing the physical world. Apart from the errors of measurement which make the correspondence of mathematics with the physical situation always conjectural, and neglecting the fact that mathematics describes only the quantitative aspects of the world to the total neglect of the qualitative, there is one danger which is even more serious. Number is continuous. Hence one is tempted to extend the equations describing physical situations beyond the range of magnitude in which the concepts have meaning. The possible discontinuity of our experience makes this a very important consideration.

The main body of the book is a justification of the new attitude toward concepts by a consideration in some detail of the following concepts: space, time, causality, identity, velocity, force and mass, energy, thermodynamics, electricity, light, rotational motion, and quanta. In each case the author attempts to show two things. (1) As we pass outside of the domain in which the concept was originally defined, we frequently find that we are unable to carry out the operations involved in its definition. Hence others must be substituted, and the concept takes on a new meaning in terms of these new operations. In the interests of clear thinking, a different name should be employed for the novel concept. (2) "As we approach the experimentally attainable limit, concepts lose their individuality, fuse together and become fewer in number" (p. 24). Thus nature not only changes in character on its horizons, but becomes simpler.

Professor Bridgman's theory seems to be open to no logical objections, but there is a word of caution. It must not be supposed that the operational definition is to *replace* the formal definition, however valuable it may be as a supplement. They are essentially different in function. The formal definition is qualitative; it enables us to identify an instance of a given concept. The operational definition is not a statement of the qualitative nature of the concept

under consideration, but rather a description of the processes involved in determining its measure, i.e., its quantitative correlate. Force is, operationally, a description of the technique of attaching and reading a spring balance. But force is more than its quantitative correlate, and the operational conception is of value only when we know what a force is. Measurement is no doubt important, but it is well to know just what it is that we are measuring. This tendency toward the mergence of physics into mathematics is not without its dangers.

If one has not the time or the inclination to read the entire book, he should by all means read certain portions. The discussion of models and constructs (pp. 52–60), though aggravatingly brief, is one of the best in the field; the treatment of explanation (pp. 37–52) contains many valuable suggestions, and the author's consideration of the principle of simplicity (pp. 198–209) is refreshingly novel. It is a book which no serious student in the philosophy of science can afford to overlook.

A. CORNELIUS BENJAMIN.

UNIVERSITY OF ILLINOIS.

Handbuch der Logik, autorisierte übersetzung von Prof. Dr. W. Sesemann. N. O. LOSSKIJ. Leipzig u. Berlin: B. G. Teubner. 1927. Pp. vii + 447.

This book has the unusual merit that any student of philosophy, whether specially concerned about logic or not, will find it interesting to read. This is due partly to the candor and intellectual vigor of the author, and partly to the fact that the book is hardly a handbook of logic, as its title would indicate, but represents rather the elaboration of an epistemological and metaphysical point of view through a detailed and careful application of it to the various problems of logic. Thus it is a "logic" in somewhat the same sense as the monumental work of Bosanquet, and has the same sort of interest. The point of view which it presents is described by the author as "ideal-realistic intuitionism." He recognizes its approximation, on the one side, to contemporary transcendentalism and to the phenomenology of Husserl, and on the other to American new realism.

In his own words: "Ideal-realistic intuitionism is founded on a view of the world as organic, and may be summed up in the thesis that between the knowing subject and every object of knowledge there is a certain coördination which imparts to knowledge the character of an intuition, an immediate *Anschauung*. The subjective acts of knowledge (attending, distinguishing, relating, etc.) are directed, without any intermediaries, upon the real object itself, which actually enters into the field of consciousness of the knowing indi-

vidual'' (p. 411). The relation of subject and predicate in judgment, as well as of premise to conclusion, is a relation of ground and consequence (*Grund und Folge*) which can be directly cognized because it is an ontological element of reality and, as such, may be given to the properly oriented mind. Acts of attending, etc., belong to the subjective side of knowledge, which is a function of the individual mind and belongs to the field of psychology. The *content* of knowledge comprises universal or ideal elements, and all necessary relations, as well as the sensuous or (in ordinary phrase) empirical. This content belongs to the objective and ontological side, which is the field of logic, as the study of the objective structure of knowledge.

For any such theory of knowledge as immediately intuitive, the study of logic poses two difficult problems; the distinction of universal and necessary from contingent, and the problem of error. If the content of knowledge is always directly given, how distinguish the essential and universal from the merely particular? And if what is known is given, and what is given is real, how is erroneous judgment possible?

Losskij's answer to the first question can not fairly be summarized in brief space—it is a matter which he considers with great care and returns to ever and anon—but its general character may be suggested. The presumption that the given, as such, is always particular and contingent, is the besetting fallacy of empiricism. In addition to the concrete spatio-temporal aspect, or moment, of individual things and events, there is a trans-spatial, trans-temporal moment of unity and systematic connection. This system-character includes causal connections and all necessary relationships. Such ideal unity is the object of a non-sensuous intuition (*nicht-sinnlichen Schau*) which is the ground of all valid judgments of necessary connectedness. Thus the Welt-Logos, which is the ontological explanation of the fact that the world is a cosmos and not a chaos, is also the epistemological basis of all logical judgments.

The problem of error is less fully treated. It is somewhat unsatisfactory to be told that all knowledge is incomplete; that error is incident to such incompleteness; and that the particular manner of such incompleteness is a function of the individual mind, and therefore to be explained psychologically. Yet one sees that this is the answer which accords with the point of view presented.

The strictly logical detail of the book hardly admits of any summary. But we must not give the impression that this is in any way slighted. Quite the contrary; all the traditional problems of logic are taken up in turn, and with care. Even when the epistemological background does not specially affect a topic, it is nevertheless included and the author's conclusions summarized and defended.

There is, of course, much here which is of interest. One item, especially impressive to the reviewer, may be arbitrarily cited: the argument against the plurality of causes and in favor of the doctrine that necessary connections hold from temporally later to temporally earlier as much as from earlier to later (pp. 199 ff.), is exceptionally able and convincing.

The student of technical logic will, perhaps, find two grounds of disappointment in the book: it is of less interest because it is not quite in the mode of current studies; and on some points Losskij, though quoting freely and discussing at length the contemporary literature in all languages, seems not to have gathered the prevailing conclusions. As an example of the former, one may cite the fact that "either-or" judgments are treated as expressing mutually exclusive alternatives (pp. 185 ff.)—a trivial matter upon which either choice is equally logical, though not equally convenient, but one in which to be out of fashion is to render one's discussion not easily comparable with that of others. To illustrate the second point, one may note that, throughout, Losskij treats mathematical judgments as essentially synthetic, and that he discusses mathematical induction (pp. 377 ff.) under the general head of "Induction" and without reference to Frege or more recent treatments based on him.

There is an index of proper-names, but no subject-index.

C. I. Lewis.

Harvard University.

Creative Personality. Ralph Tyler Flewelling. Introduction by H. Wildon Carr. New York: Macmillan Co. 1926. Pp. 304.

The last few years have seen a rather considerable output from those who term their philosophy "Personalism." E. S. Brightman, Borden Parker Bowne professor of philosophy at Boston University, has published in two successive years *An Introduction to Philosophy,* and *Religious Values,* each of which gives expression to the personalist point of view; and his colleague, A. C. Knudson, has just published *The Philosophy of Personalism.* H. A. Youtz, of Oberlin, presents the same point of view in his *Supremacy of the Spiritual;* and for some years J. W. Buckham, of the Pacific School of Religion, Berkeley, has been expressing, in a series of books, a closely affiliated teaching. In this personalist group Professor Flewelling has occupied a leading position, chiefly by editing, throughout the eight years of its history, *The Personalist,* which the University of Southern California issues quarterly. But, in addition, Professor Flewelling wrote in 1915 *Personalism and the Problems of Philosophy,* for which Rudolph Eucken provided an introduction, and in the present

volume, *Creative Personality,* he has given a comprehensive and systematic setting forth of personalism.

The fountain head of this personalist movement is the teaching of the late Professor Bowne, whose last comprehensive statement of his philosophy, published in 1908, bore the title of *Personalism.* Back of Bowne the movement traces itself to Lotze, with whom Bowne was once a student. Mr. Wildon Carr, in his introduction to the present work of Professor Flewelling, links its teaching also with Renouvier and with the late Professor Howison of the University of California, but there is no evident trace of Renouvier in *Creative Personality;* and while both Flewelling and Howison are interested in giving a positive metaphysical status to the self, they do so in very different ways. Howison, with his stress on "the Limits of Evolution," would not agree at all with Flewelling, who appropriates much from Bergson, and Flewelling's book contains a strong infusion of pragmatism, which is incompatible with Howison's rationalism. *Creative Personality* would have gained in clarity and weight if it had contained more *Auseinandersetzung* with Howison and with other personalist tendencies, such as the British volume, *Personal Idealism.*

Personalism is primarily interested in the self as a unique and integral type of reality, and especially in the ethical and religious significance of the self. In consequence, it defines itself in sharp contrast to both naturalism and absolute idealism. But as personalism is definitely theistic, and to a considerable extent idealistic, the contrast with naturalism is much the sharper of the two. *Creative Personality* arraigns naturalism, and in particular behaviorism, over and over again—perhaps more often with satire than with argument. In view of this attitude it is quite surprising that the author should allow himself to drop into behavioristic language—as when he says: "The brain is the muscular (sic!) organ which grounds mental activity. The scope of mental activities is dependent on its normal physical structure as the act of running is dependent on the presence of normally functioning muscles in the leg" (p. 115). Such a statement inevitably reminds one of J. B. Watson's assertion that "when we study implicit bodily processes we are studying *thought;* just as when we study the way a golfer stands in addressing his ball and swinging his club we are studying *golf.*" Of course, there is no ambiguity in Flewelling's general position; the ambiguity in the statements quoted results, apparently, from his effort to minimize the mind-brain problem.

Professor Flewelling's central interest is in the uniting of human creativeness and theism as complementary conceptions—as, for example, when he presents the ultimate reality as "an agent continu-

ously creative in whom, as co-creators, all free intelligences, and in lesser wise, all living things, live, and move, and have their being" (p. 54). The author's favorite way of supporting this teaching is to develop philosophical "deadlocks"—as between mind and matter, quantity and quality, the static and the changing—and then to introduce the above doctrine as one which delivers us from these deadlocks. One who sympathizes with the author's central interest as much as does the present reviewer is likely, nevertheless, to desire much more constructive argument for his main position than this volume gives.

The crucial test for personalism as a metaphysics would seem to be its attitude towards the question of realism. Mr. Wildon Carr, in his introduction, writes: "Personalism differs from most forms of idealism by the careful disclaimer of any argument based on the subjective nature of knowledge, and it differs from most forms of pluralism inasmuch as in affirming the reality of persons it does not imply the denial of impersonal reality in any form" (p. 12). But Professor Flewelling himself says: "If we assume the whole temporal order to be the momentary creation of a living Cosmic Intelligence from which proceeds the activity which we know as the atom, and which gives our idea of reality, substantiality, extension, and mass, and which creates the whole into being as the field of intelligence, endowing persons with a degree of freedom to act upon it, we shall have gone far toward the solving of the philosophical deadlock between mind and matter" (pp. 142, 143). Of course, hardly any idealism regards impersonal reality as illusory; but idealism is unable to give impersonal objects any epistemological status apart from metaphysics, and it is not clear that personalism does otherwise.

The freshest and most satisfying chapters in *Creative Personality* are those which treat of values and of religious experience and belief. Here we find moral values interpreted as having intrinsic validity and genuine meaning for the cosmos; human personality understood as a genuine part of biological and social evolution and yet as possessing real initiative; and religious experience grasped as a characteristic function of the human spirit, capable of interacting fruitfully with science and morality, and making an indispensible contribution to our philosophy of the universe. "Personality," says the author, "must be part and parcel of the world of life;" but "the highest type of personality is realized in an active and living adaptation to a moral and spiritual universe" (pp. 247, 248).

To the American personalist group as a whole, because of the recent evidences of its vigor, one looks for such an elaboration of the personalist philosophy as may justify its being ranged with the

idealist, pragmatist, and realist movements as a vital and significant phase of philosophic thought in this generation.

EUGENE W. LYMAN.

UNION THEOLOGICAL SEMINARY.

Matter and Gravity in Newton's Physical Philosophy. A Study in the Natural Philosophy of Newton's Time. A. J. SNOW. New York: Oxford University Press, American Branch, 1926. 256 pages.

Signs multiply that physical science has passed from a dogmatic and deductive to a critical and reconstructive era. It is curious to note that when the words of a great genius are taken to be absolute truth, no one proposes to investigate the genesis of his ideas, but once let his authority be systematically questioned, and it will not be long (especially in an age dominated by the notion of evolution) before historical analyses of his mental development will appear.

Sir Isaac Newton's reign having terminated—though who is to be his successor is yet in doubt—it is natural that the question how he gained his sceptre should provoke inquiry. In the present volume Dr. Snow proposes to answer this question so far as concerns Newton's basic conception of matter and his explanation of why it moves in ways which the formula of gravitation attempts to describe. The reader will find in the essay a highly illuminating discussion of the play of various intellectual currents in the natural philosophy of the seventeenth century, merging as they did in Newton's mind under the two-fold guidance of his experimental and positivistic scientific method and his traditionalist theological metaphysic. The way in which, even under the shackles of essentially incompatible encompassing ideas, modern science got started on its centrally sound and epoch-making mathematico-experimental method, is one of the most remarkable phenomena of intellectual history; in Dr. Snow's book there are gathered many of the materials necessary to answer the question how this came about, as well as the equally important question, what part these incompatible ideas played in making necessary the scientific revolution we are now witnessing.

The logic of science, especially in its relation to the logic of metaphysics and other philosophical enquiries, is the perennially interesting and still fundamental question of modern thought. The nature of Newton's logical assumptions and their larger historical significance in the light of this question demands the fullest critical exploration. The present volume attacks no such profound issue as this, but the author deserves gratitude for traversing the country and collecting much of the data without which such inquiries could hardly begin.

E. A. BURTT.

HARVARD UNIVERSITY.

JOURNALS AND NEW BOOKS

THE PHILOSOPHICAL REVIEW. Vol. XXXVI, 6. The Effectiveness of Thought: *A. L. Hammond.* The Platonic Highest Good (II): *R. C. Lodge.* The Significance of Business and Professional Ethics: *C. F. Taeusch.* Dr. Broad on Perception and Matter: *J. E. Turner.* The Argument from Similarity: *S. C. Pepper.*

REVUE D'HISTOIRE DE LA PHILOSOPHIE. 1re Année, Fasc. 4. La critique du réalisme des concepts chez Sextus Empiricus: *P. Couissin.* La formation des idées politiques de J.-J. Rousseau du premier au second discours: R. Hubert. Sur la formation de la théorie hégélienne du Begriff (à suivre): *J. Wahl.*

REVUE PHILOSOPHIQUE. LIIeme Année, Nos. 9 et 10. De la genese des variétés psychologiques: *J. Van Biervliet.* L'algorithme musical: *Ét. Souriau.* Les trois modes du raisonnement analogique: *J. Picard.*

HOMMES. REVUE DE PHILOSOPHIE ET D'ESTHETIQUE. Ire Année, No. 2. Principes de Morpologie Générale: *E. Monod-Herzen.* Notes sur le Réalisme en Art: *Luc Haesaerts.* Le But de l'Esthetique: *S. C. Pepper.* Essai sur le Fond et la Forme: *Paul Haesaerts.* Le Fond et la Forme: *W. Van Ryswick.* La Vie Silencieuse: *I. Chandra Bose.*

Burrow, Trigant: The Social Basis of Consciousness. A Study in Organic Psychology Based upon a Synthetic and Societal Concept of the Neuroses. (International Library of Psychology, Philosophy, and Scientific Methods) New York: Harcourt, Brace & Co., Inc. London: Kegan Paul, Trench, Trubner & Co., Ltd. 1927. xviii + 256 pp.

The Chung Yung. Or the Centre, the Common. Translated by Leonard A. Lyall and King Chien-Kün. New York and London: Longmans, Green & Co. 1927. xxvii + 24 pp. $2.40. (The Chung Yung is the centerpiece of the Confucian philosophy. It is a digest of the teachings of Confucius, compiled by his grandson. Notes have been added explaining historical allusions. The preface is prepared by the young Chinese scholar King Chien-Kün. In it he gives a modern Chinese view of the teachings of Confucius.)

Peucesco, Mathieu: Mouvement et Pensée. Foreword by Charles Richet. Paris: Félix Alcan. 1927. 170 pp. 12 frs.

Sée, Henri: Matérialisme Historique et Interpretation Économique de l'Histoire. (Études Économiques et Sociales. II) Paris: Marcel Giard. 1927. 136 pp. 10 frs.

Whitehead, Alfred North: Symbolism. Its Meaning and Effect. New York: Macmillan Co. 1927. x + 88 pp. $1.50.

The Classification of Pupils in Private Schools. A Report on the Distribution of Mental Ages, Chronological Ages, Educational

Ages, and Intelligence Quotients in Schools Affiliated with The Private School Teachers' Association of Philadelphia. Philadelphia: The Committee on Intelligence Tests of The Private Schools Teachers' Association. (Pamphlet No. 2) 1927. 24 pp.

NOTES AND NEWS

The program for the academic year 1927–1928 of The Philosophical Union of the University of California at Los Angeles is as follows:

NOVEMBER 4. "The Great Art Which is Philosophy." *Hartley Burr Alexander,* Professor of Philosophy, Scripps College.

Discussion: *F. T. Blanchard,* Professor of English, University of California at Los Angeles; *R. C. Denison,* Professor of Philosophy, Pomona College.

DECEMBER 2. "The Conception of God"—a symposium. *H. W. Carr,* Visiting Professor, University of Southern California; *Edward L. Parsons,* Bishop of the Protestant Episcopal Church in California; *L. H. Miller,* Professor of Biology, University of California at Los Angeles.

JANUARY. (At a date and upon a subject to be announced). *W. P. Montague,* Professor of Philosophy, Columbia University.

Discussion: *J. E. Boodin,* Professor of Philosophy, Carlton College; *Shepherd I. Franz,* Professor of Psychology, University of California at Los Angeles.

FEBRUARY 24. "Peirce's Pragmatism." *J. H. Muirhead.* Visiting Professor at the University of California.

Discussion: *C. K. Judy,* Professor of English, California Institute of Technology; *B. C. Ewer:* Professor of Psychology, Pomona College.

MARCH 30. (Name of the speaker will be announced later.)

APRIL 27: Student Meeting. (Three essays, chosen on a competitive basis, will be presented by students in the Department of Philosophy.)

MAY 11. Annual Meeting. Presidential Address: *Charles H. Rieber,* Professor of Philosophy, University of California at Los Angeles.

Presiding Officer: *E. C. Moore,* Director of the University of California at Los Angeles.

The public will be welcome at the meetings. The officers will be pleased to furnish information regarding membership to any who may be interested.

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Volume XXIV. No. 18. September 1, 1927.

Relativity and the Lay Mind (I). BENJAMIN IVES GILMAN.
The Datum as Essence. GEORGE BOAS.
Book Reviews. Journals and New Books. Notes and News.

Volume XXIV. No. 19. September 15, 1927.

Relativity and the Lay Mind (II). BENJAMIN IVES GILMAN.
If We Have Life, Do We Need Philosophy? MARJORIE S. HARRIS.
Book Reviews. Journals and New Books. Notes and News.

Volume XXIV. No. 20. September 29, 1927.

A Principle for Realism. CHARLES M. PERRY.
Anthropology and the Rights of Man. BENJAMIN GINZBURG.
Book Reviews. Journals and New Books. Notes and News.

Volume XXIV. No. 21. October 13, 1927.

Mr. Dawes Hicks's Theory of Perception. GEORGE BOAS.
The Data of Consciousness as Essences. DURANT DRAKE.
Biological or Psychological? MARY WHITON CALKINS.
Book Reviews. Journals and New Books. Notes and News.

Volume XXIV. No. 22. October 27, 1927.

Wholes and Prehensive Unities for Physics and Philosophy. LEWIS P. AKELEY.
Book Reviews. Journals and New Books. Notes and News.

Volume XXIV. No. 23. November 10, 1927.

Dr. Schiller and Analysis. DICKINSON S. MILLER.
The Doctrine of "Illusion" and "Error" in Scheler's Phenomenology. PAUL ARTHUR SCHILPP.
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